132978-2

IN THE CLAIMS

CLAIMS:

1. (currently amended) A one-step process for producing a purified phenol stream from the decomposition of cumene hydroperoxide, said one-step process ~~comprising~~consisting essentially of the following steps, in order:

decomposing the cumene hydroperoxide to form a crude phenol feedstream, wherein the crude phenol feedstream contains an initial concentration of hydroxyacetone and methylbenzofuran; and

contacting ~~a~~ the crude phenol feedstream ~~containing an initial concentration of hydroxyacetone and methylbenzofuran~~ with an acidic ion exchange resin at a temperature of 50°C to 100°C to concurrently reduce the initial concentration of the hydroxyacetone and the methylbenzofuran in the crude phenol feedstream ~~to~~ and produce ~~the~~ the purified phenol feedstream.

2. (currently amended) The one-step process of Claim 1, wherein the initial concentration of the hydroxyacetone is less than or equal to 500 parts per million and wherein initial concentration of the methylbenzofuran is less than or equal to 250 parts per million of the crude phenol stream.

3. (currently amended) The one-step process of Claim 1, wherein contacting the crude phenol stream with said acidic ion exchange resin is a batch method or a continuous method.

4. (currently amended) The one-step process of Claim 4, wherein said batch method comprises contacting said crude phenol stream with the acidic ion exchange resin catalyst for a duration of about 1.5 hours to about 23 hours.

5. (currently amended) The one-step process of ~~Claim 4~~Claim 3, wherein said continuous method comprises contacting said crude phenol stream with the acidic ion exchange resin catalyst at a weighted hourly space velocity of 0.1 to 5.

6. (currently amended) The one-step process of ~~Claim 4~~ Claim 3, wherein said continuous mode comprises contacting said crude phenol steam with the acidic ion exchange resin catalyst at a weighted hourly space velocity of 1 to 2.

7. (original) A one-step purified phenol stream obtained in accordance with the method of Claim 1, wherein said purified phenol stream comprises less than or equal to 50 parts per million of methylbenzofuran and less than or equal to 10 parts per million of hydroxyacetone.

8. (currently amended) The one-step process of Claim 1, wherein contacting the crude phenol feedstream with said acidic ion exchange resin is at a temperature of ~~about~~ 70°C to ~~about~~ 90°C.

9. (original) The one-step process of Claim 1, wherein said acidic ion exchange resin comprises a hydrogen form of a sulfonated styrene-divinylbenzene ion exchange resin.

10. (original) The one-step process of Claim 9, wherein said acidic ion exchange resin catalyst is crosslinked at about 1 to about 20 weight percent of divinylbenzene relative to an overall weight of said acidic ion exchange resin.

11. (original) The one-step process of Claim 9, wherein said acidic ion exchange resin catalyst is crosslinked with greater than or equal to about 8 weight percent of divinylbenzene relative to an overall weight of said acidic ion exchange resin catalyst.

12. (currently amended) A continuous process for producing a purified phenol stream from the decomposition of cumene hydroperoxide, said ~~one-step~~ continuous process consisting essentially of the following steps, in order: ~~said process comprising:~~

decomposing the cumene hydroperoxide to form a crude phenol feedstream, wherein the crude phenol feedstream contains an initial concentration of hydroxyacetone and methylbenzofuran; and

contacting ~~a~~ the crude phenol feedstream at a temperature of 50°C to 100°C and at a weighted hourly space velocity of 0.1 to 5 with a sulfonated styrene-divinylbenzene acidic ion exchange resin, wherein the resin is crosslinked with greater than or equal to about 8 weight percent of divinylbenzene relative to an overall weight of said acidic ion exchange resin, ~~and wherein the phenol stream has an initial concentration of hydroxyacetone and methylbenzofuran to~~ and concurrently reduceing the initial concentration of the hydroxyacetone and methylbenzofuran and form products having a boiling point greater than phenol; and

distilling said treated crude phenol stream to produce the purified phenol feedstream.

13. (original) The continuous process of Claim 12, wherein the initial concentration of hydroxyacetone is less than or equal to about 500 parts per million and the initial concentration of methylbenzofuran is less than or equal to about 250 parts per million.

14. The continuous process of Claim 12, wherein reducing the initial concentration of the hydroxyacetone and methylbenzofuran comprises lowering the initial concentration of the hydroxyacetone to less than or equal to about 10 parts per million and the initial concentration of the methylbenzofuran to less than or equal to about 50 parts per million.

15. (cancelled)